UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/524,359	08/09/2005	Benoit Chabot	2891-1-001PCT/US	6135

23565 7590 07/16/2008

KLAUBER & JACKSON
411 HACKENSACK AVENUE
HACKENSACK, NJ 07601

EXAMINER	
SHIN, DANA H	

ART UNIT	PAPER NUMBER
1635	

MAIL DATE	DELIVERY MODE
07/16/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/524,359	CHABOT ET AL.	
	Examiner	Art Unit	
	DANA SHIN	1635	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 May 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-7 and 28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-7 and 28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 May 2008* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *5-9-08*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of Application/Amendment/Claims

This Office action is in response to the communications filed on May 9, 2008.

Currently, claims 1, 3-7, and 28 are under examination on the merits.

The following rejections are either newly applied or are reiterated and are the only rejections and/or objections presently applied to the instant application.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Response to Arguments and Amendments

Withdrawn Rejections

Any rejections not repeated in this Office action are hereby withdrawn.

Maintained Rejections

Priority

The benefit of the 60/402,765 filing date remains denied for claims 7 and 28 for the reasons of record as set forth in the Office action mailed on February 6, 2008 and for the reasons stated below.

Applicant's arguments filed on May 21, 2008 have been fully considered but they are not persuasive. Applicant argues that pages 19-20, 48-49, and Example 4 of 60/402,765 provides enablement for the method of claim 7 in the manner provided by the first paragraph of 35 U.S.C.

112. However, none of the passages pointed out by applicant describes an enabling method of claim 7 which is performed in a patient. First, the disclosure of 60/402,765 does not contain pages 48 and 49, as the last page of the specification is page 32. Second, the disclosure of 60/402,765 does not provide "Example 4" as the last Example in the specification is "Example 3" described on pages 30-32. Third, pages 19-20 of 60/402,765 merely describe that the invention is "useful as therapeutic agents in the treatment of diseases" (see page 20), without providing any enabling disclosure for the claimed invention of claim 7. With regard to claim 28 drawn to SEQ ID NO:12, applicant argues that the nucleotide sequence is found in Table 1 of 60/402,795. It is found that Table 1 in 60/402,795 (see pages 21-22) contain information of diseases and their associated genes and mutations. Nowhere is the nucleotide sequence of SEQ ID NO:12 found in Table 1. Examiner does not understand how any one of the passages pointed out by applicant provides adequate support and enablement for the invention claimed in claims 7 and 28 when the alleged support does not even exist in the disclosure of 60/402,795. Hence, the priority remains denied for claim 7 and 28.

Claim Rejections - 35 USC § 112

Claims 1, 3-7, and 28 remain rejected under 35 U.S.C. 112, first paragraph as failing to comply with the enablement requirement for the reasons of record as set forth in the Office action mailed on February 6, 2008 and for the reasons stated below.

Applicant's arguments filed on May 21, 2008 have been fully considered but they are not persuasive. Applicant argues that the instant specification does provide sufficient guidance for one of ordinary skill in the art to practice the entire scope of the claimed methods without undue

experimentation at the time of the invention, because the *in vitro* data and cell culture techniques correlate with *in vivo* methods. In so doing, applicant refers to Roberts et al., Sazani et al., and Suwanmanee et al. First, the Roberst et al. reference was published in the year of 2006, which is 3-4 years after the date of the present invention. Hence, it is irrelevant and does not provide any merits to applicant's arguments, because the legal basis of the enablement requirement is to assess the "state of the prior art" and the "level of one of ordinary skill and predictability in the art" at the time of the invention. Second, the Sazani et al. reference published on December 2002 shows that antisense oligonucleotides are delivered to mouse tissues via intraperitoneal injection and exhibit antisense activity in mice *in vivo*. Again, the Sazani et al. reference is a post-filed reference to the invention of claims 1 and 3-6. As for claims 7 and 28, Third, the Suwanmanee et al. reference is a proper prior art reference for claims 1, 3-7, and 28; however, the reference does not whatsoever teach an *in vivo* method wherein an oligonucleotide is administered into a mammal, let alone a patient. What the reference shows is that oligonucleotide-pretreated cells (cultured cells wherein the oligonucleotide is transfected *in vitro*) are injected into a mouse. There is no method step in the Suwanmanee et al. reference that is remotely similar to *in vivo* embodiments embraced by the claimed methods or that would help one of ordinary skill in the art to practice the entire breadth of the claims at the time of the invention.

Applicant further cites MPEP 2164.02 and merely asserts that the working examples in the specification correlate with the claimed invention, without providing any reasons as to why the working examples correlate with the full scope of the claimed invention. Hence, this rejection is maintained.

Claim Rejections - 35 USC § 102

Claims 1 and 3-6 remain rejected under 35 U.S.C. 102(a) and 102(e) as being anticipated by Newman et al. for the reasons of record as set forth in the Office action mailed on February 6, 2008 and for the reasons stated below.

Applicant's arguments filed on May 21, 2008 have been fully considered but they are not persuasive. Applicant argues that Newman et al. do not teach an oligonucleotide comprising two portions: one that binds to a specific region upstream of a splice site of a target mRNA and the other that contains a protein binding site sequence element. Contrary to applicant's argument, Newman et al. explicitly teach a method of modulating alterative RNA splicing activity in a cell by introducing a single-stranded polynucleotide sequence comprising the following: a polynucleotide sequence capable of binding to a nucleotide binding protein (e.g., hnRNP A1-binding consensus sequence) and a synthetic RNA sequence. See claim 12 and paragraph 0408. Furthermore, Newman et al. perform active method steps comprising introducing a polynucleotide of 138 nucleotides in length comprising an upstream portion of exon 8 of chicken fgf2IIIb containing the UAGGGC or UAGGGA sequence that is recognized by hnRNA A1. See paragraphs 0337 and 0416; Figure 4. Hence, the claims remain rejected as being anticipated by the teachings of Newman et al.

Claim Rejections - 35 USC § 103

Claims 1, 3-6, and 28 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Newman et al. and Taylor et al. for the reasons of record as set forth in the Office action mailed on February 6, 2008 and for the reasons stated below.

Applicant's arguments filed on May 21, 2008 have been fully considered but they are not persuasive. Applicant argues that neither Newman et al. nor Taylor et al. teach the claimed oligonucleotide. As stated above, contrary to applicant's argument, Newman et al. disclosed an oligonucleotide that binds both to the hnRNP A1-recognition sequence and an upstream exon/intron splicing pre-mRNA or mRNA sequence.

The declaration filed on Mary 9, 2008 is insufficient to overcome the rejection of claims 1, 3-6, and 28 based upon the combination of Newman et al. and Taylor et al. as set forth in the last Office action for the following reasons:

The declarant declares that the claimed oligonucleotide is "more efficient at modulating splice site selection and splicing of the pre-mRNA than oligonucleotides having only a nucleic acid sequence that is complementary to a specific region upstream of a splice site in a target pre-mRNA molecule". As stated above, Newman et al. clearly taught an oligonucleotide that meets the structural requirements/limitations set forth in the claims such that it comprises a polynucleotide that is bi-functional: it binds to both an upstream portion of a splice site in a target pre-mRNA and a hnRNP A1. Further, there is no objective evidence showing that the claimed oligonucleotide is "more efficient" than that of Newman et al. In view of the foregoing, the claims remain rejected as being obvious over the prior art teachings of Newman et al. and Taylor et al.

Conclusion

No claim is allowed.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANA SHIN whose telephone number is (571)272-8008. The examiner can normally be reached on Monday through Friday, from 7am-3:30pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James (Doug) Schultz can be reached on 571-272-0763. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Dana Shin
Examiner
Art Unit 1635

/J. E. Angell/
Primary Examiner, Art Unit 1635